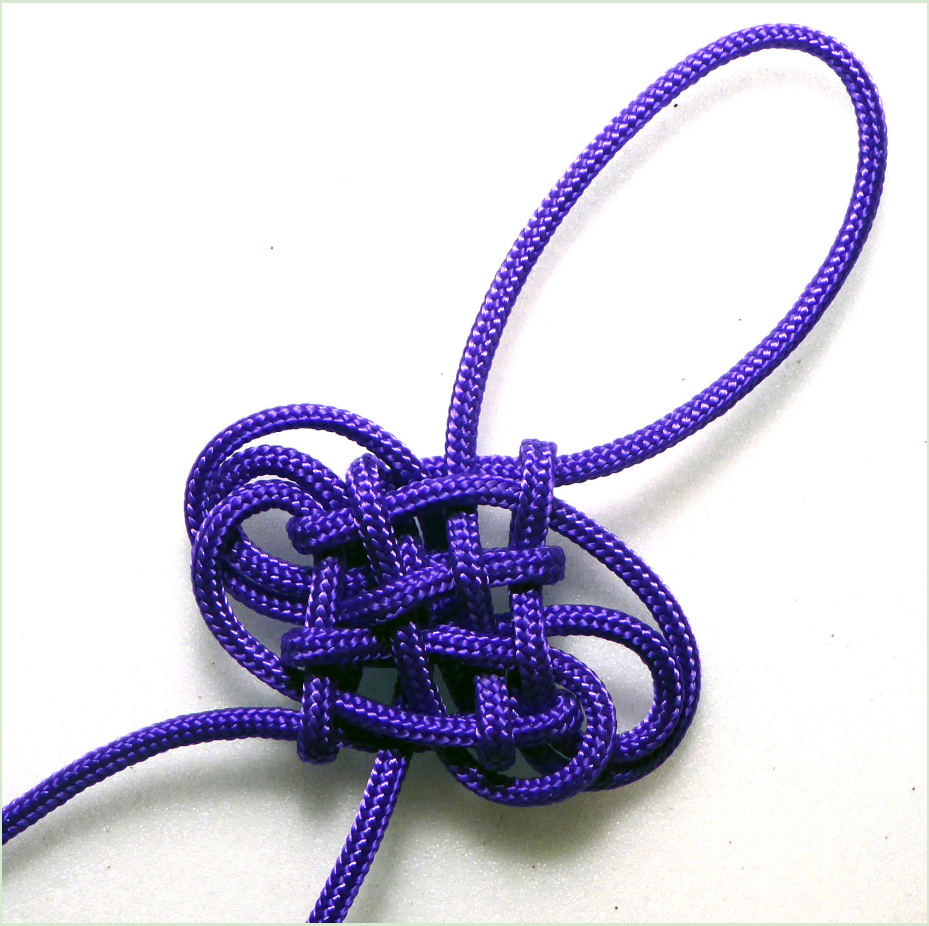
ISSUE 146 MARCH 2020

KNOTTING MATTERS

The Magazine of the International Guild of Knot Tyers



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Subscription Rates	
	/year
Juniors (under 18)	£5
Adults	£26
Family	£30
Group (min 10)	by arrangement

KNOTTING MATTERS

THE MAGAZINE OF THE INTERNATIONAL GUILD OF KNOT TYERS

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The editors welcome the submission of letters, articles, photographs and sketches for publication. Correspondence may be by e-mail knottingmatters@igkt.net but more extensive items, such as articles for publication, as well as any pictures, which should be of good quality, need to be sent as attachments. All submissions must include their author's name and e-mail or postal address.

If events are to be publicised in *Knotting Matters*, note the months of publication - March, June, September and December. Although the deadline for the next issue is given at the foot of the Contents page, please note that the editors begin putting it together at least three weeks earlier.

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ISSN 0959-2881
PRINTED BY GIPPING PRESS Ltd
Tel: 01449 721599

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PLEASE NOTE: LETTERS & ARTICLES FOR THE JUNE 2020 *KNOTTING MATTERS* MUST BE RECEIVED BY 8th MAY

FRONT COVER: Baby's Rattle knot by Europa Chang Dawson (see p35)

EDITORIAL

Dear All,

You may have been surprised to find two copies of *Knotting Matters* in the envelope. It is not a mistake, and the explanation is on the enclosed sheet. We hope you will place the spare copy where it is most likely to come to the attention of a potential new member or members. Your Guild certainly needs them.

With the several mentions of Australian meetings in recent editions we have been acutely conscious of the severe problems caused by the devastating fires. We know that the rains have brought an end to the most urgent issues, but our thoughts go out to the those who will take many months and years to recover and rebuild their lives.

Please see the obituary of Glad Findley, a former President of the Guild 1993-1995.

In response to our request, we had hoped to hear from a decent number of members on what they did about World Knot Tying Day. We had a letter from only one (*see Letters*) - Thank you, Tim Martin. This is in stark contrast with the numerous accounts received by IGKT France of their members' activities.

We discovered a copy of the December *Knotting Matters,* received in Australia, which had two blank pages. There are only a few ways it can happen, the most likely is when two sheets stick together as they travel through the press: rare but possible. Because of the way the magazine is set up for printing, there should be three other copies with blank pages. We are surprised not to have been informed of any. Please let us know if you come across one, and tell us which pages are blank. We will, of course, send you a replacement, if you tell us your postal address. We are very glad to receive letters and particularly articles (on any knotty subject), the magazine depends on a steady trickle. There has been a modest increase during the year, though nothing like a stream. We don't wish to sound ungrateful, but we much prefer to receive the full text including illustrations (so we can see where they should be placed), preferably in Word (or a similar programme) rather than only as a PDF. It is particularly helpful if we can *also* have the illustrations as separate files, at as high a resolution as you can achieve.

You may be as pleased as we are that the library of the Maritime Museum in Newport News, Virginia, have made Bushby's manuscripts available online at https://catalogs.marinersmuseum.org/search?query=bushby%20knots (https://tinyurl.com/td9xcey)

David Pepper

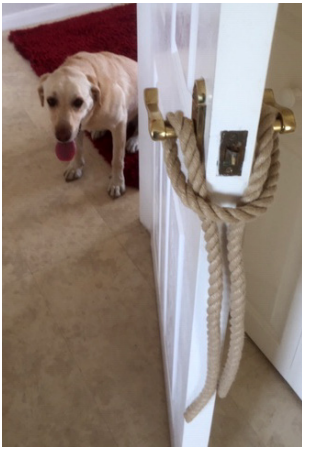
LETTERS TO THE EDITOR

Dear Maurice,
I recently made a door-stopper for the bathroom, to provide ventilation for drying the shower. The glass door closes automatically, so it needs to be stopped to keep it a bit open. If it was completely open, the door would get in the way. I made a Twisted Solomon bar (from an old climbing rope) and finished the ends with a common whipping (made of 550 paracord).

Alex Kamenski

Dear Maurice,
Last summer's hot weather required doors to be left open to welcome any passing breath of cooling breeze, but after jumping out of my skin yet again when it slammed, and seeing dog do the same, I stomped off to rummage about in the 'Pieces too short to use' bag. A quick Lark's Head did a tidy job (though not as fancy as Anke's in *KM* 132, p27) by creating an anti-slam and automatic tail-saver, killing two birds with one stone, as it were. Three, actually, because it reduced the said bag's contents by one item, which is never easy.

N King



Dear Maurice
A thought occurred to me the other day when I was watching three dog-walkers attempting to untangle the leads from the nine dogs they were walking.
Surely the ultimate challenge in dog training would be to get them to create braids? Forget herding sheep! Not being a dog owner there is no way I can put this to the test but there must be plenty of Guild members who could. Over to you!

Penny Bodger

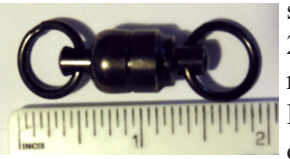
Are we talking flat or round braid? - Editor

Dear Maurice,

Knot tyers who noticed the error in Lancelot Haslope's original illustration of the Figure-8 knot (*KM* 145) may enjoy this logo from outdoors company Alton. The guys at Alton subsequently explained that when they started the company they were avid climbers, with limited Photoshop skills. When I told them about Haslope's error in 1891, they replied (with a smile) that at least they are in good company. All goes to show that it is easier to tie some knots than to illustrate them (correctly). At least that is true for me.
Robert Birch

Dear Maurice,

This may be an idea useful to anyone making or having a rope-making machine. I have made a machine during the year and copied other members' ideas for the moving end, being a tripod-like setup with a weighted pulley system. The only problem I had was the action of a swivel when twisting three cords together into a single rope. Ordinary fishing swivels seemed to be too flimsy, but those for shark fishing are made to take heavier loads. After a look on the web I found a range of 5 sizes.



The body is brass with stainless-steel bearings. The smallest is rated at 200lbs, the largest 660lbs. I bought the largest in the range, and this has worked very well. The price of them I thought was fairly modest considering it was a problem overcome. I paid £17.99 for a pack of 5, the smaller ones cost less. Prices from other suppliers may vary.
Mark Richmond

Dear Maurice,

I consider that one of the happiest sights is a crocodile of school children on an excursion during school hours. One such group I saw recently in a small bush town was using a length of rope with large coloured rings attached. These rings were held by two children, side by side, as they progressed along the road that was lacking a footpath. I could not see exactly how the rings were attached as the troop was at quite a considerable distance. I assume some form of lashing had been utilised for the task. I would have liked to have taken a picture but an old man photographing young children tends to be frowned upon these days, so I kept the camera in my pack.

It occurred to me that this method of, at least partially, controlling a bunch of excited youngsters would be of interest to teachers and their helpers engaged in walks involving small children.

I am told, by one who has experience in these excursions, that they are highly stressful and keeping the little darlings from straying is no easy task. Maybe the rope and rings would make controlling them a little easier. The gear would be easy to construct, not very expensive and easily stored in a (ditty?) bag. Perhaps some members would consider making the device for a local school.

Frank Brown

Hi Maurice,

We have now had the second MShed Event Day and it was pretty much the same as the first. Very good day and lots of interest in knotting *per se* and IGKT.

Re *KM* 144: Very impressed with Europa Chang Dawson's response to the 'Caswell challenge' on page 39. Amazing! I consider that it has been met with flying colours. That challenge was laid down at the IGKT AGM meeting in Loughborough in 2018. Since it was my challenge, I am claiming naming rights and (to me at least) Europa's beautiful little kangaroo will be known as the *'Pan Changaroo!'.* Thank you, Europa, for accepting the challenge.

Jim Caswell

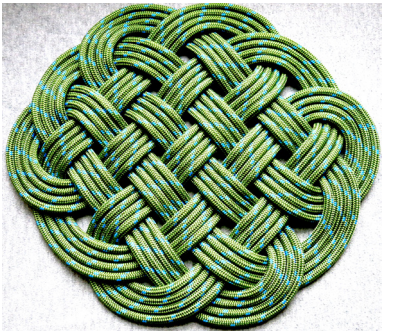
Hi Maurice,

You humans think you are so smart doing these fancy clever things with your opposable thumbs and rotatable forearms, well, I will tell you what is really, really clever and something no human I've ever seen even try, and that is undoing these things with your teeth! All kinds of whippings, easy peasy, Wall and Crowns single and double, straight forward, Mathew Walkers, a work still in progress, break-through expected soon.

Ruff

Buddy (aged 6)

Dear Maurice,



The mat illustrated is *ABOK* #2335, about which Mr Ashley notes: "Another nearly circular knot". The design also appears in the late Eric Franklin's booklet *Nylon Novelties* as illustration number 98.

Mr Franklin refers to it merely as "Mat". I don't think either description does it justice, as it makes a particularly handsome object. Since the mat has two inter-connected hearts as a motif, I think of it as the Twin Hearts Mat.

Specifications are: Material - 8mm polypropylene rope, dimensions 16in x 16in,

rope required 56ft. (Maurice, I hope you are noting all these facts down and putting them into a database somewhere)! This mat will be a gift.
I should advise you of several errors I have spotted in Mr Franklin's booklet:

In illustration number 95, the tuck immediately to the right of the exiting strand should be an under, not an over. Illustration number 96 shows it correctly.

In illustration number 99, the tuck should be an under, not an over. Illustration number 100 shows the correct tuck.

In illustration number 8 (Key Fob (ii)), the final five tucks should be over, under, over, under, over, not over, over, under, under, over, as shown. Illustration number 9 shows the correct tucks.

John Heselton

Dear IGKT,
I am a commander and trainer at the Sailing Academy - AKADEMIA ŻEGLARSTWA. Our activity focuses on children and young people under 18 years of age. We run free activities in the promotion of sailing, and encouraging children in sport. Tying knots is one of the elements of training. We are glad to join the IGKT group of knot tyers and would like to proudly represent IGKT in Poland. In 2020, we want to organize the Polish Championships involving: knowledge of knots and knot tying, tying knots against the clock, behind the back, and blindfold.
Sorry for the English, but I use Google translate.

Patryk Różański www.akademia.zeglarstwa.pl

Dear Maurice,
Here's an update on the progress of the macramé Periodic Table
My dad has found the PT booklet to be excellent promotional material, sending it out to potential hosts for the artwork. Sir Martyn Poliakoff, chemistry professor and YouTube star, has one booklet proudly displayed in his office, open at the centre page on the photo of the full work. I've followed my artwork to several locations around the UK: Cambridge University; The Festival of Ideas at the University of York; An art exhibition in Whitstable Kent; The Royal Society of Chemistry in Burlington House, London; The Royal Society of Edinburgh and most recently to the Royal Institution.

The Cambridge University periodic table event was fascinating, with guest speaker Yuri Orgenesson, the one living person with an

element named after him - No. 118. He was in charge of the team that produced the four heaviest man-made elements.

I was able to speak to him and ask what the next step was. “A collider in space to make even heavier elements”. At the Royal Society of Edinburgh, I spent three days with my artwork, teaching the macramé technique and showing off my more recent 3D work.

In December, I was up at the Royal Institution where the work was on show beside two other periodic tables. The oldest known printed version and a ‘scarcity model’ showing the difficulty in obtaining the elements used in the manufacture of smartphones.

With next year in mind, I’ve made a macramé version of the Arecibo message sent out into space in 1974, for the Royal Astronomical Society’s bicentennial quilt project.

Dad plans to promote the macramé Periodic Table to the art world, after a successful year in the science world. He has pointed out that the artwork bridges the gap between science and art. At the moment I’m concentrating on making space-related objects, the planets and Star Wars toys.

Jane Stewart.

Dear Maurice,

Regarding the future of IGKT, I would like to offer my brief personal thoughts. I recognise that there will be many different opinions on this topic and I hope these will be taken in the constructive manner in which they are intended.

I joined IGKT through an interest in practical knots, which ones to use and how to tie them, and that is still my principal interest.

I do enjoy the visual beauty of knots and have enjoyed making some mats but am still surprised at the amount of coverage *KM* gives to non-practical aspects and to decorative knotwork in particular.

When I joined, I expected IGKT to be the authority on all knots, but I now realise that is an impossible challenge. But perhaps we could move a little further in that direction.

Whilst I enjoy *KM*, it is only available to members and we should recognise that prospective members will look to the internet, specifically our website and social media, for our public face. Whilst I am comfortable with websites, I am not a user of social media (SM) but know that it is the channel we must embrace if we are to survive and grow.

I also recognise that the creation and maintenance of internet resources requires a lot of effort. I am willing to volunteer but like most other members I have lots of other things competing for my time.

With the above in mind I would like to make three suggestions which immediately come to mind for consideration and discussion.

1. There are many excellent internet resources on knotting, which potential members may come across, but which make no reference to IGKT. Specific examples are the numerous videos, such as the one you will find by going to YouTube and searching for Tim Thompson truckies 3 ways, and also the excellent Knots 3D website www.knots3d.com which offers a mobile app.

   To increase IGKT exposure I suggest asking these other sites to refer back to IGKT by including a link to our website. In return we could potentially provide links to their sites, although I recognise that this could require a lot of resources and potential problems in deciding which sites to include.

2. Concerning being an authority on knots, if we recognise *ABOK* as the best source, why not provide an electronic version of it through our website/social media? Amazingly it seems to be free to download from archive.org so we could provide either a copy directly or a link to that website. I prize my hard copy of *ABOK* but we need to accept that many people who might like a reference work would never dream of owning a physical book for such a purpose.

3. Assuming that no other member is skilled enough or available to do it we could look for a social media consultant who specialises in non-profit organisations and commission a report on how we might use SM and our website to further our aims of attracting new members. The results could then be added into our discussion of the future direction.

Thanks again to all those who give their time to IGKT and *KM*.
Brian Wedge
With respect to KM's content, we can, of course, only publish what we receive. Some interesting ideas here: we hope to hear what others think of them - Editors

Dear Maurice,

Just a quick note to show what I did with the World Knot Tying Day poster sent out with the September *KM*. We have a shop window to fill under our house - Tower Shop. The IGKT poster is in the bottom right hand corner.

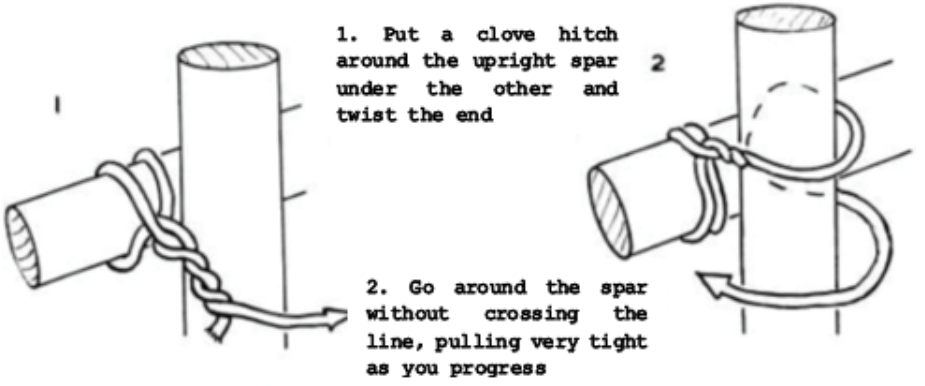
For a Christmas theme I included Ashley's notes and diagrams on parcel tying, and made off-prints available from the neighbouring Talgarth Information & Resource Centre. Also available are short lengths of rope for people to have a go at tying some of the basic knots in the window (each shown step-by-step).

Tim Martin

Great effort, Tim, well done - Editors

Dear Maurice,

I believe there is a serious layout issue with the IGKT Knot Chart's instruction on Square Lashing (page 56) that I would like to bring to your attention. In essence, I think the illustrations may have been attached in the wrong orientation. Specifically, at Step 1, the explanatory text states *"Put a clove hitch around the upright spar under the other (horizontal spar)"* yet the diagram clearly shows


1
1. Put a clove hitch around the upright spar under the other and twist the end
2
2. Go around the spar without crossing the line, pulling very tight as you progress

the Clove hitch around the horizontal (the other) spar: My understanding of best practice (and I'm going way back to my scouting days) is: Start with a Clove hitch under the load (ie almost always on the vertical spar) and end with

a Clove hitch on the outside of the load (almost always on the horizontal spar). This practice is indeed consistent with the text on the chart but not with the illustrations.

The following illustration from John Sweet's 1974 classic *Scout Pioneering* (no scout should be without it) clearly demonstrates and (in contrast with the IGKT Chart) is what I believe to be best practice.

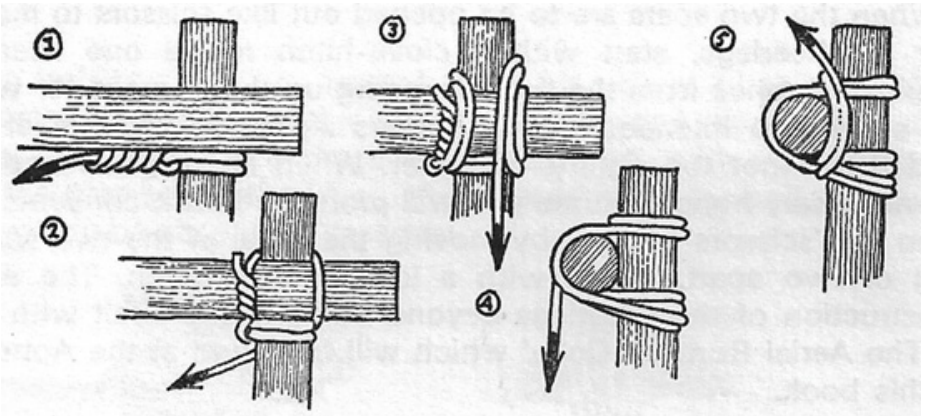


Fig. 30.

I should also note that the text description provided in *Scout Pioneering* is consistent with the text description on the IGKT Chart. It is this consistency that leads me to believe that the issue is more to do with the orientation of the illustrations on the chart than with the accuracy of the descriptions.

I would be interested in other members' comments on this matter and, in the interest of supporting the IGKT as an authority on 'best practice' in this field, recommend that if indeed the illustrations on this chart are deemed to be inaccurate that immediate steps be taken to amend the chart.

Jim Caswell
Australia

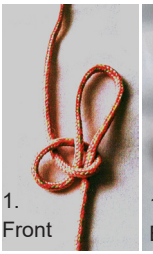
Dear Maurice,

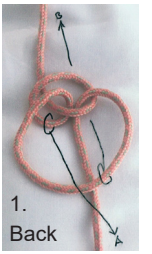
Single Bowlines on a bight.

Before I joined the guild in 1984, I had never seen or heard of a single Bowline on a bight. The Double Bowline on a bight, yes, I had tied this knot many times.

My wife bought me *ABOK* for Christmas the same year I joined the guild. Ashley wrote "a Single Bowline on a bight would have the same knot formation as the Double Bowline on a bight, with just one loop and parallel legs" (*ABOK* #1057). When I read this I regarded it as a knotting challenge.

After a few attempts using this Double Bowline as a template and using just one loop, I came up with knot number one. (Front and back to right). Why hadn't any one tied or documented this knot before?

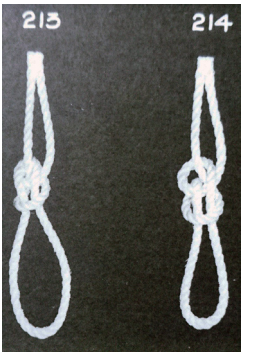




So I tried different ways of tying this knot and came up with two variations: Numbers two and three (to the left).

These two knots were in *KM* 42, as The Ultimate Bowline, twenty-five years ago. All three knots are identical on the face but are different on the rear aspect. Number two is a true Bowline, if you reverse the knot with a loop at the top and pull the right-hand leg up, it becomes a standard Bowline (*ABOK* #1010).

On knot numbers one and three, reverse the knot with a loop at the top, pull up the right-hand leg and you will get a left-handed version (*ABOK* #1034.5). These are both weak knots, unless tension is on both legs. If, before tightening knot number two, you pull the legs in an east-west direction you will get a single loop on a bight which is secure.



While on holiday in Canada, twenty-three years ago, I bought Graumont and Hensel's (G&H) *Encyclopedia of Knots,* first published in 1939, five years before *ABOK*.

Reading this book when I came home, I found three references to a single Bowline on a bight. Knots 213 and 214, p38. These are Bowline-like structures but without parallel legs. Knot 36, p60 had parallel legs but lacked a Bowline-like structure (probably the three knots were rejected by Ashley, as not conforming to his interpretation of a single Bowline on a bight with parallel legs).

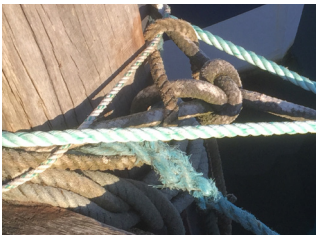
Like most of G&H's knots, they are shown tied, but how to tie them is not included. Knot 36 was a challenge, this I tied as knot number two but, before tightening, I changed the legs over. The finished knot had a Bowline shape. On reversing the knot, it was the same as G&H's knot 36.

I think these knots would have accorded with Ashley's interpretation.

Owen K Nuttall.

Hi Maurice,

Finding myself with a spare minute I thought I would put it to good use and peruse the ropery of those miners of the deep, the Weymouth fishermen. Not a pretty picture I have to say. The thing is, why? Lack of time, crew, money, knowledge or interest, or a combination of all these?



Compare the four pictures (above and right) with those of narrow boats at the Stourport symposium (left).

It was a brave crewman that suspended those large coils from the stern, must have had considerable faith in the hitch he used.

So is this a case of extreme function over form, with overtones of 'KISS' (keep it simple stupid), and a hint of 'who cares what it looks like'? Not sure where you can go to see ropes used in 'the wild' as it were, and smile in appreciation of demonstrable skills.

Let's see a flood of letters and pictures from our great readership in defence of ropes in professional hands.

Gordon Teenan

Dear Maurice,

Concerning the rant (*KM* 145), the author has a point, possibly several. We could start a 'Best Table' award, along the lines of a country fête/puppy show/craft display. Titles to be decided eg 'most innovative', 'prettiest', 'best design', 'the one the judges would most like to take home', 'the worst ever devoid of effort or imagination' etc.

Some advice to people might help, such as, to aid photographers in the shape of passers-by, the local press and other members, do please try and elevate standards, and print quality, by not advertising 'Costa, Thermos, or the nearest sandwich shop'. The display area is not a canteen. Thank You.

N. King

Dear Maurice

I was delighted to see the review of the reprint of *The Wee Lighthouse Knot.* I bought a copy of this pamphlet nearly 30 years ago. I already had a copy of *ABOK,* but without much knowledge I struggled to know quite what to do with it, it was all a bit overwhelming. Then I stumbled on the Pieter Van de Griend booklet, I picked it up and had a go. I credit this book with my lifelong interest.

I wasn't put off by comments about difficulty; on the contrary, they only spurred me on and gave me a great sense of achievement when I finally completed my first one. It taught me how knots go together and how to build something. I have tied a number of them as gifts over the years and they always delight the recipient. I can't recall where I bought my copy which lurks somewhere in the house, but I've not seen another since. I recall the author describing how, when asked what he did with the ends, saying that he replied "I throw them away", which I have shamelessly stolen when I'm asked, and it always raises a smile!

This is me sitting on the deck of the Thames barge 'Xylonite' tying a WLK more years ago than I care to remember.

Sue Pennison

CALLING ALL MODELLERS

One of my brothers has started making some plank on frame 1/64th model boats and is wondering just how far one can go in the search for authenticity with regards the ropework.

Is there anyone with experience prepared to share? If so please get in touch.

Maurice

NECKTIES

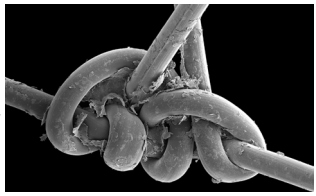
Older Guild members may recall their surprise when they saw that Geoff Budworth wore clip-on neck ties. But for him as a front-line London cop (on and off-duty, even after retirement) being grabbed by a knotted tie could be a choking hazard. Recently, a lighter side to this sartorial issue was reported in *The Times* newspaper. When a customer visiting the exclusive London men's tailoring firm of Gieves & Hawkes asked for a clip-on bow tie, the tailor replied rather sniffily "Sir should be aware that this is a gentlemen's outfitters. Not a joke shop."

The Giant Knot

by Richard Hopkins

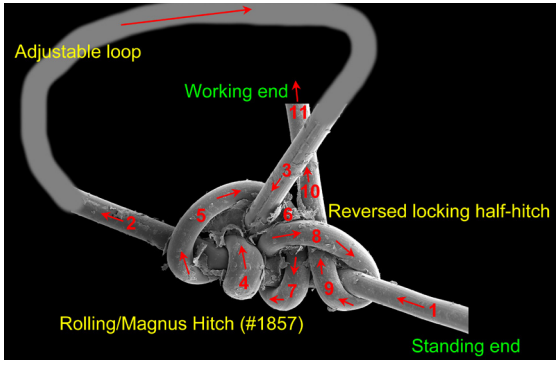
I have been in correspondence with Maciej Tomczak after answering a query he put to the Guild secretary. I had thanked him for consulting the Guild and said that if he had any further questions then he could always ask again.

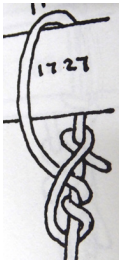
Some time later he sent me a link to the Guardian Science photographic competition showing the runner-up. It was of a suture removed from a wound pictured by a scanning electron microscope. The suture was only 0.25 mm in diameter and there were dead skin flakes still adhering to the knot.



https://www.theguardian.com/artanddesign/gallery/2019/dec/10/scientific-phenomena-photographs-of-the-year-in-pictures-royal-society-publishing#img-15 (https://tinyurl.com/wve7z9v).

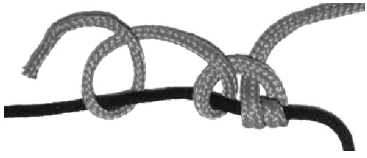
After getting confused with the number of ends and trying to tie one cord around another unsupported cord I realised that two of the ends would have been part of the suture and so made a loop. Maciej then sent an annotated picture joining up the loop ends and suggesting that it was a rolling hitch.





I was not happy with this and spent time perusing Ashley. After several false starts looking at the Midshipman's hitch I found *ABOK* #1727 the Jam hitch. At the same time Maciej found a paper on arthroscopic knots describing the Giant knot.[1] The problem here was that in two consecutive photos showing how to tie it, the lead did not follow the same path.

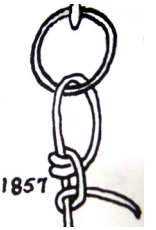
Which one is correct?



We then found a You Tube video[2] by one of the surgeons who wrote the article, demonstrating the tying of the Giant knot and this seems to confirm the Jam hitch, but it is still not very clear. I like the Jam hitch because the text makes the point that it will slide down to position and then jam when pulled, but there is always the thought that the surgeons do not always tie what they think they have tied (as is the case with some of us also) and the locking Half hitch saves the day.

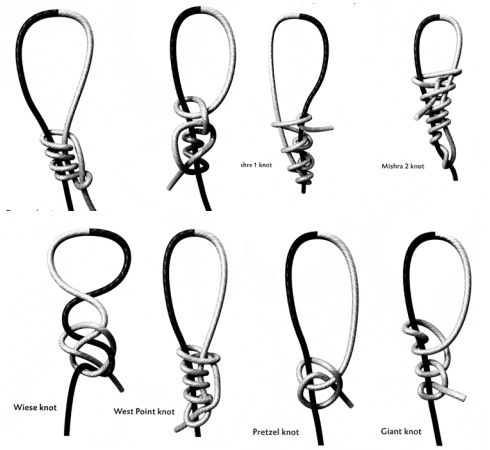
I found this to be of particular interest because, several years ago at a Bushcraft show, where I was demonstrating with Nick Cockroft, we were asked by a surgeon who was visiting the site what we could recommend to tie outside an incision and then slide into place inside a knee.

We suggested the rolling hitch but did not remember the locking half hitch so I hope that our omission did not leave someone crippled.



Further work by Maciej brought us to *ABOK* #1857 where the lead according to Ashley prevents the knot from twisting, which must be good in this application.

Having tied the knot myself in different thicknesses of cord (even in some sutures) I feel that the best version is like Ashley's Jam hitch but tied away from the item it encircles. The instructions in the paper require a second locking half hitch which is jerked to spill the knot and lock it securely.



This discussion has opened my eyes to a new field or family of knots that are often dismissed by knotters as just an extra turn on a reef knot. There are similarities to the vast range of fishing knots which are widely discussed and I feel that more attention needs to be given to these specialist knots which perform such an important role.

It would be interesting to hear from any suitably qualified member about knots used for other surgical applications, both inside and outside the body.

[1] The Giant knot: A new one-way self-locking secured arthroscopy slip knot.
Basim A Fleega MB and Sherif H Sokkar MD, *Arthroscopy The journal of Arthroscopic and Related Surgery Vol 15 no 4 May-June 1999 pp451-452.*

[2] https://www.youtube.com/watch?v=pYjfvR6O6zk

With Friends Like These!

by Maurice McPartlan

The moral of this story is that there are friends and friends!

Bosal showing the rodent damage

A few months ago *Friend 1*[1] came across a hackamore with a rawhide bosal noseband that had been gnawed by some rodent and immediately told the owner that he knew someone who could sort it! So the said bosal – along with hackamore headstall and rigging – landed in my lap. All very interesting, but how does one repair rawhide? With rawhide of course but where could I get my hands on some. Having not really found anything on-line I remembered talking to *Friend 2* about one of his multiple pastimes. Cutting a long story short, said friend was able to come up with strips of rawhide about 100mm x 2m and it only cost me postage!

Now if you have read anything about working rawhide, you will know that it sounds a bit like alchemy: full of mystery and arcane practices, so I turned to *Friend 3* – he too has appeared in *KM* as the then president of the now defunct APWA. A Magus of all things rawhide! As well as some general advice, he gave me the recipe for a rawhide 'soap' made of equal measures of pure soap, saddle soap and water. This magic potion was to be whipped up with water and the foam applied to rawhide being worked.

Introducing new strands

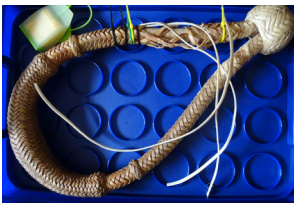
I will not bore you with a blow-by-blow account of how I went about it, but will share a few annotated pictures and thoughts about the process.

I am lucky enough to own a copy of Grant, *How to Make Cowboy Horse Gear*[2] and got the impression that "my" bosal and rigging was a carbon copy of the ones described in Grant.

1 I will not name my friends, but here are a couple of hints: Friend 1 is a close collaborator on matters knotting, Friend 2 has a reputation for playing with chariots and Friend 3 is an aficionado – if not to say master – of rawhide work

2 Cornell, Maritime Press, Maryland, 1956.

Once I had disassembled the various parts, the extent of the damage became clearer and a first decision was needed – repair or restore? My understanding being that for a restoration one does the minimum amount of work to make the object functional, while repair could be much more extensive. I would have been tempted to remove the braid from the Spanish Ring down to, and including, the Heel Knot, but I went for the 'restore' option.



Bosal in cake holder to rehydrate the strands with water under tray to avoid becoming too sloppy

Strands ready to finish with soap foam

While struggling with my medium (bloody rawhide!) I sought more information in the shape of Robert L Woolery, *Braiding Rawhide Horse Tack*[3]. I discovered a well-written book by someone who obviously knows what he is talking about, with possibly the best button-knot diagrams I have ever seen.

Paracord wrap to allow the rawhide to dry

So I eventually managed to fill the gap in the bosal and put back the hackamore headstall and rigging. Following a lengthy struggle with the Fiador knot, I blessed Grant for his alternative way of tying it (p56) having failed to tie it by more traditional methods.

Rawhide complete

Putting back hackamore etc.

One singularly overwhelming impression that this work left me was that for every 1m length of workable rawhide lace I used, I must have discarded four or five times that in the process of splitting, lace-cutting and skiving.

Ready to be returned

While I stand by my decision to restore the bosal, the job left me frustrated in that I hadn't tried all the different techniques allied to the making of a bosal.

3 Cornell Maritime Press, 2013, 2nd ed,

So having a little left over, I decided to try and make a new bosal, converting measurements from inches to centimetres. So instead of an inside measurement of 12in, I went for one of 12cm. This was great fun, and much more satisfying! But hats off to the masters, I reckon many would have been spinning in their graves if they could have seen me.

So, many thanks to my *Friends,* and if anyone knows of a course on fine rawhide work, please contact me! Also if you find a horse small enough to wear a 12cm bosal, please contact *Friend 2*.

Just to show it got back home

Corderie Vallois

by David Pepper

Corderie Vallois (Musée Industriel de la Corderie Vallois)
Notre-Dame-de-Bondeville, Haute-Normandie, France

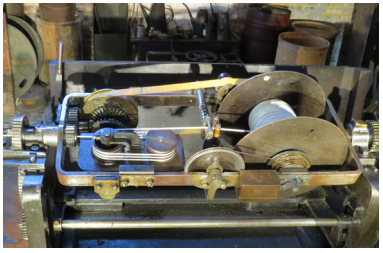
From 1759, Jean Toussaint, a merchant from Darnétal, operated a paper mill on the site of the present museum. In the early 1820s it was replaced by a cotton spinning mill, which survived through various ownerships until 1865 when, as a consequence of the cotton crisis, it was converted to the spinning of wool. Later, it was rented to Jules Vallois a rope-maker who, when he became its owner in 1897, set up a workshop for twisted cords on the ground floor using largely English machinery, and one for braided cords with mostly French units on the floor above.

The work required attention to detail and concentration, so it was mostly women, both young and old, who were employed (and paid less than men).

When Jules Vallois died in 1918, his son Gaston took over the running, and later handed over to an engineer Henri Bresch. Later still, the latter's son-in-law, Maurice Mallet, ran the factory from 1936 until 1978 when it closed. The cause of its final demise was the gradual decline in the French textile industry.

Faced with the destruction of the mill, Mallet, with Jules Vallois's grandson Pierre Vallois, supported by the Association of Industry and the Musée de l'Homme, Historical Monuments and Museums of France, and local communities, fought to save the building. In 1989, the Haute-Normandie region, which then owned the building, decided to create an industrial archaeological museum, and on 11th February 1994, the Musée Industriel de la Corderie Vallois opened, France's first industrial museum. It was then owned by the department of Seine-Maritime, and in 2016 it was transferred to the Métropole Rouen Normandie.

The factory is powered by a 5.5m diameter, undershot water wheel with 48 curved paddles powered by the Cailly river. It is regulated by a sluice gate operated from inside the mill and, at three revolutions per minute, it can produce about 15 kilowatts of power. Inside the mill, a massive system of cogs and wheels, transfers the power to two propeller shafts which drive production. Twisting machinery convert two lots of six threads into a 12-thread twine which is wound onto bobbins.

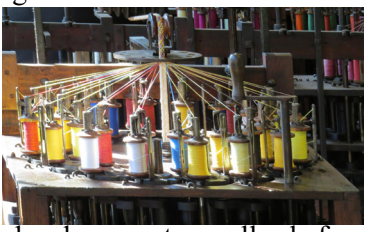


These are then arranged in a three by three formation from which the twine, under tension, is twisted, and the resultant cord wound on larger bobbins under the machine. These are then transferred onto a winding machine to create balls of various sizes, originally of cord used primarily for candle wicks.

On the ground floor is the larger cast-iron machinery of English manufacture from the 19th century. This stranding machinery rotates and twists together 144 threads from 24 bobbins of six threads each, onto a reel and a receiving bobbin, through a purifier to remove the dust, and various devices designed to maintain the twist. This bobbin is then transferred to the cable laying machine. Three strand bobbins on the machine are rolled out and assembled into a cable in a 10mm wide channel. Via various other devices to maintain tension and a tight lay, the cable is collected on a bobbin, from where it is unwound, and then rewound and rolled unto 8kg bobbins of about 100 metres.

The cord used to be sold by weight rather than length, and was used in making transmission belts for looms, belts for monks' habits and curtain ropes.

On the upper floor, the French machinery for making the braids includes a spooler which unwinds the thread from the larger bobbins onto the smaller



bobbins required for the braiding machines.

Flat braid made from 13 bobbins (always an odd number) intertwined and runs onto a pulley before being rolled up on a winder. These were used for lighter wicks and ornamental trimmings for curtains. Round braid is made from 20 bobbins (always an even number), 10 being wound one way and 10 the other, intertwined and rolled via a pulley onto the winder. These were used as wicks for lighters and kerosene lamps, and as small transmission belts. There is a single English round braiding machine from the beginning of the 20th century, using 16 small bobbins, 8 turning clockwise and 8 counter-clockwise. It is apparently easier to set up and less noisy than the French machines, but also less reliable!

The corderie was clearly not involved in the manufacture of nautical materials, but is a valuable reminder of the many and varied need for cords both utilitarian and decorative, and this working museum is well worth a visit by anyone travelling in Haute-Normandie.

Strongest Sailing Knot ?

by Dan Lehman

In *KM* 143 Colin Byfleet reports on a 2015 (May) *Yachting Monthly* article written by Chris Beeson entitled "What is the Strongest Sailing Knot?". This article was also cited in some discussion on the IGKT forum Practical Knots. Sadly, both the *YM* and Colin's articles demand redress.

The title of the article "What is the Strongest Sailing Knot?" reveals a dubious quest: "strongest" is likely seldom a key criterion; and assessing, even defining, *strength* is another problematic issue. What looks better on a slow-pull test in new rope might prove to be less durable in actual practice, or with a different loading.

Chris Beeson has an on-line video of how to tie nine knots reportedly tested in the 2012 April issue www.yachtingmonthly.com/sailing-skills/how-to-tie-nine-sailing-knots-3887 (https://tinyurl.com/uq957bm) of which my main take is that he isn't very familiar with knots (he's done his thirty years sailing with three or four knots; he seems just to be demonstrating these other knots for the video. Not very inspiring.) It says something that *YM* had this fellow do an instructional video on knots.

The 2015 article's introduction entices the reader with "How does a Carrick bend fare against a Double Fisherman's?" and although it asserts that both knots were tested, it doesn't otherwise mention the Carrick bend. The treatment of the knots it does feature is mediocre, at best; the reporting is cursory and sometimes sloppy. What they show as their (mis-named) "double fisherman's loop" (by which they mean the Strangle noose) is in fact one turn more, a Double Strangle (triple Overhand) noose, ie nominally they present Ashley's #409 but in fact show (and test?) #1120 (which might help to explain why this knot tested so much stronger than the Grapevine bend). Their Figure Eight eye knots are poorly dressed in both ropes (and also in the video).

Although they use a trio of ropes, and even claim to show "which knots could bear the most load for each of our three cordage types", they in fact only test the Round Turn and two half hitches in the laid rope, and only otherwise use this rope for the Eye splice and Bowline, the lone knot in common! Finally, the results they get with the Marlowbraid are impressively low, for most knots! I've not seen such poor results for a traditional rope.

Now, Colin asserts that several "items of interest" can be found in the *YM* article, which he enumerates. I'll address each in turn.

Re #1, that splices are stronger than knots, is usually the case, but in *YM*'s article there is the surprising result of one knot equalling the 82% breaking strength of the Eye splice (which seems low, but is within the range that Marlow Ropes gives on-line for such ropes).

Re #2, Colin opines that Dyneema's rigidity accounts for its poor performance in knots. While there are some stiff ropes with hi-modulus fibres, there are also flexible ones. Without knowing the product name for the tested rope (odd, this!), one cannot but guess, as there's no mention of flexibility in the *YM* article. Moreover, one should note that the Dyneema part of *YM*'s "Dyneema" rope is the core only, and this never broke. So it's wrong for Colin to say that it lost (any) strength.

Re #3, Colin reaches well beyond any basis to generalize that "laid polyester is considerably more accommodating to knots than modern [cordage]." Firstly, we see only two ropes to compare. And of these, they have only one test in common viz for the Bowline. Although, I must say that the Marlowbraid's knotted strength does seem surprisingly low, often below 50%! One can find ample evidence of modern cordage performing well with knots, eg Evans Starzinger did some tests of ¼in Samson LS & XLS polyester yacht braid tied at opposite ends with respectively a Bowline and Figure Eight eye knots; his ten specimens (for each rope) broke, amazingly equitably, with equal distribution over the knots ie five broke at Bowlines, five at Figure Eights, and at about 82% tensile for the LS and 70% for the XLS, far better than did Marlowbraid! But this, too, is just one test (albeit a better done one) of a few knotting possibilities. Evans used his tested strength, not Samson's rating, though he found that to be accurate.

Re #4, Colin remarks that the Dyneema is well the strongest spliced cordage of the trio, though having a cross sectional area "roughly half that of the laid rope". Actually, given that this core and sheath rope's strength comes from the core, it's more like a mere third of the area!

Re #5, again, there is no mention of flexibility in this report for one to base assertions on. Otherwise, one can find contrary results.

Re #6, given *YM*'s dubious testing ability, I'd hesitate to conclude much based on their results. And "useful" need not imply "has great strength": splices have benefits in material/space efficiency and in security, as well.

Re #7, the much-maligned Reef knot is our briefest end-to-end knot, like it or not. Yes, in some materials it just won't work. But the oft-parroted warnings of its great danger fail to be matched by actual cases of problems.

Like those splicing nuts, the Reef knot has uses (for me most recently, tying the ends of torn plastic bags together to make short tie-ons over bulging rubbish bins to hold lids down in a storm).

Colin refers to a Reef knot "collapsing". He should say "spilled", as "collapse" suggests an action like capsizing rather than the slipping that actually occurred (in Marlowbraid).

Re #8, I don't know "quite as often". The Marlowbraid spilled in both the Reef knot and Sheet bend; in the latter, it did so at a reasonably high load. (Actually, the *YM* report is ambiguous about the failure: it reads "lasted fairly well" which could apply to anything, elsewhere says "breaks", but the photo of the tested knot is of the two ends, neither of which shows a break point, they indicate slippage.)

Colin also remarks on the laid rope not being tested much, and that it should do well in "the Double Fisherman's knot, as the curvature is not that different from that in a round turn" (which presumably points to the 67% strength of this rope in the Round Turn and two half hitches). This shows two mistakes: 1) he must mean "loop", *YM*'s silly term, for #1120, as a "round turn" was seen tested in the laid rope with the somewhat similar noose hitch, Round Turn and two half hitches; but 2) it's wrong to look at this turn as key, as the break did not occur in that turn but in the Clove hitch around the standing part, and for the Double Strangle noose (#1120), it was the standing part that broke, and had that had a full/round turn, maybe it would've topped the Eye splice!

WHAT IS IT?

At a meeting of the Australian Plaiters and Whipmakers in Toowoomba, December 2019, one of the members brought two examples of a tool that he was asking everyone to identify. Both show signs of having been used with a hammer and one bears an oriental-looking design. The wooden handles are about 60mm long and a bit over 10mm wide. Alongside the two is a modern version picked up in a market.

If you know what these are, please write to the editors and we will pass on the message.

How to Reduce Jamming

by Maciej Tomczak

How to reduce knot-jamming of a rope hitched to a spar
Experimental evaluation of hitch tension reduction methods

Introduction

When a rope hitched to a spar is under great tension, the hitch may become 'jammed' and difficult to untie. Several methods are commonly used to reduce tension transferred from the load at the rope's standing part to the hitch with the intention of lowering the likelihood of it jamming.

The tension may be reduced by wrapping the working end of the rope around the spar (and optionally around the rope's standing part as well) in an attempt to increase the rope-on-spar and rope-on-rope friction, thus reducing the rope tension at the working end entering the hitch.

Assuming that the rope is perfectly flexible and inelastic and that the static friction coefficients between rope-on-spar and rope-on-rope are constant and independent of the rope-object contact shape and area (Amonton's Law), the so-called Capstan equation can estimate the tension reduction at the hitch:

Equation 1: $$T_{Load} = T_{Hold} \times e^{\mu\alpha}$$ where:

T_{Load} is the tension in the standing part of the rope to which a load is attached

T_{Hold} is the reduced tension in the working part of the rope entering the hitch

e is the Euler's constant (approximately equal to 2.72)

μ is the static friction coefficient between the rope and the spar/capstan

α is the total angle swept by all turns of the rope wrapped around the spar, in radians[1]

The exponential form of the equation means that the rope tension is rapidly reduced with a moderate increase of either the friction coefficient end/or the angle swept by the rope around the spar before the working part enters the hitch. This investigation focuses on quantifying the effectiveness of various methods of wrapping the rope around a spar on the tension reduction in the working end and, consequently, the reduction in jamming potential of the final hitch.

1 A radian is a unit used to express the magnitude of a plane angle, commonly used in mathematics but less commonly used in practice than degrees. An angle of 180° is equivalent to $\pi \approx 3.1415$ radians. The Capstan Equation requires the angle swept by the rope to be expressed in radians for it to work.

Methods and Apparatus

The experimental setup is shown below. A braided polyester cord of 3mm diameter was hitched to a bamboo spar with a diameter of 27mm. Tension in the standing part of the rope was generated by varying the amount of water in a bucket hanging from the standing end of the rope. The reduced tension in the working part was measured with a digital force meter.

The experimental arrangement showing a bucket used to produce adjustable tension in the standing part of the rope, a bamboo spar around which the rope was wrapped, another bamboo spar used as an anchor for the digital force meter, and a digital force meter measuring the reduced tension in the rope working part (approximately equivalent to the tension of the rope entering the hitch which, when high enough, may cause it to jam).

Results

Four loads and seven spar-wrapping arrangements were investigated. Table 1 summarises the tension reduction for each of the tests. The missing entries indicate that the measurements were deemed invalid for this combination of the applied load and wrapping technique and thus not representative of the performance of the method being tested

Table 1. Tension reduction at a hitch as a function of spar-wrapping technique

Standing End Tension (load) T_{Load} / N	Reduced Tension in the Ropes Working Part (entering the final hitch) T_{Hold} / N (% force reduction)						
	Turn (α=π)	Round Turn (α=3π)	2 Round Turns (α=5π)	3 Round Turns (α=7π)	Munter	Munter +	Super Munter
19.9	10.8 (44%)	3.9 (89%)	1.4 (93%)	-	4.8 (75%)	-	-
52.0	37.0 (29%)	15.5 (71%)	6.8 (87%)	2.6 (95%)	8.2 (85%)	-	-
99.1	61.6 (38%)	25.5 (74%)	13.7 (86%)	5.2 (95%)	17.5 (83%)	7.0 (93%)	-
147.2	86.2 (41%)	35.5 (76%)	17.5 (88%)	7.5 (95%)	19.7 (87%)	7.7 (95%)	-

Estimating the coefficient of static friction between rope & spar surfaces

This section sets out to estimate the coefficient of dry static friction between the rope and the bamboo spar surface. While knowledge of the friction coefficient is not strictly necessary to compare empirically the potential for tension reduction by methods that this study evaluates, it may allow for discriminating between the relative contribution of the rope-on-rope friction used by some of the methods, and the friction due to the turns round on the spar alone.

Figure 2 shows the linear regression of load vs. reduced tension. Lower gradients indicate higher (ie more desirable) tension reduction overall, irrespective of the number of rope turns involved. The last two methods from Table 1 were excluded from the graph due to paucity of data.

The slopes (gradients) of the best-fit lines in Figure 1 for the first four methods (ie single and round turns around the spar) are equivalent to the $1/e^{\mu\alpha}$ expression in Equation 1. The coefficient of static friction between the rope and the spar surface can thus be calculated as:

Equation 2: $$\mu = \frac{\ln(1/\text{slope})}{\alpha}$$

Figure 2. Tension reduction as a function of rope wrapping method

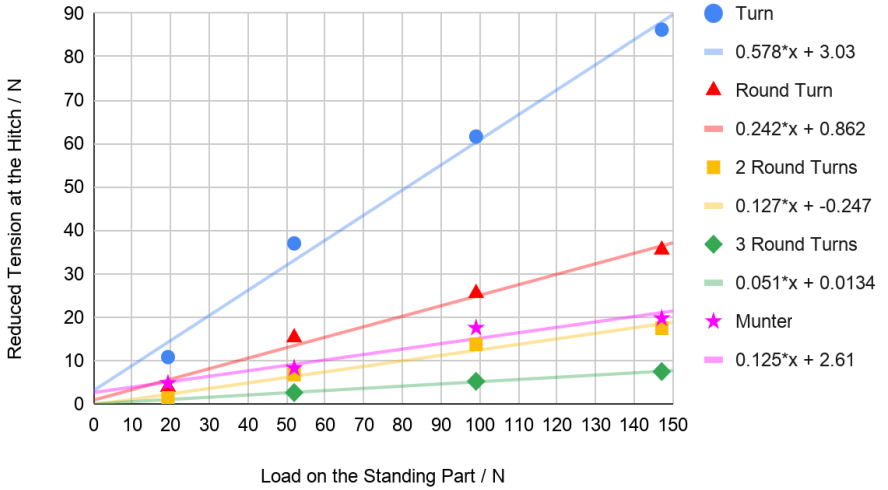


Table 2 summarizes the friction coefficient estimates derived from the slopes or regression lines in Figure 2 and Equation 2, using the angles swept by the rope around the spar as reported in Table 1.

Table 2. Static friction coefficients between rope and bamboo spar surface.

Wrapping method	Linear Regression Line Slope	Measured Static Friction Coefficients μ	Ave. Static Friction Coefficient μ ± 2*SD (95% CCC.I.)
Turn (α=π)	0.578	0.174	0.15 ± 0.03
Round Turn (α=3π)	0.242	0.151	
Two Round Turns (α=5π)	0.127	0.131	
Three Round Tuns (α=7π)	0.051	0.135	

The analysis of the experimental data indicates that the dry static friction coefficient for the small-diameter polyester rope used on the smooth surface of the bamboo spar, for the range of loads applied, should be expected to vary within the range of 0.12 to 0.18 at 95% confidence level. These values compare well with typical values for similar capstan systems.

Discussion

While the *Munter*[1] arrangement shown in Table 1 has reduced friction to a level comparable with *Two Round Turns* ($\alpha=5\pi$), using only two passes of the rope around the spar, it has been excluded from friction coefficient calculations of Table 2 as it is a compound hitch utilizing the friction or rope turns around the spar and the friction of the half turn of the working part wrapped around the standing part, and thus it is not easily modelled by Equation 1.

Two other arrangements: the *Munter+* and the *Super Munter*[2] appeared to be capable of reducing load tension, but the range of loads used in this experiment (less than 150 N) rendered invalid measurements for those arrangements.

This is because both of those methods, under relatively small tension loads, tend to act like hitches themselves, violating the non-elasticity assumption used in deriving Equation 1, and locking the working end of the rope, thus preventing meaningful tension reduction measurements. For those two methods, under low loads and static conditions, the reduced tension in the working end is effectively zero, as all the load is held by the hitch-like wrap arrangement around the spar and the standing end.

This does not necessarily indicate that those methods are superior to other spar-wrapping techniques, especially when subjected to variable loads and shakes, it just means that the present evaluation was unable to quantify their performance. Higher loads should be applied to properly compare those arrangements with the single and round turns around the spar reported in this study.

Uncertainties introduced by instrumentation and procedure

There were several aspects of both the setup and the instrumentation that introduced uncertainties into the results.

The only measuring instrument used, a digital strain-gauge force meter (a fishing scale), is deemed to be both sufficiently accurate and precise (especially as it was used to measure the differences between tensions, not their absolute values).

Uncertainties caused by the non-vertical rope arrangement and rope and bamboo spars elasticity contributed to variability in measurements and thus the uncertainty of the results. Use of single diameter, and only one type of rope and one type of spar surface limit the applicability of the conclusion of this experiment to other rope-spar arrangements. While random variability of measurements could be reduced by more replications, practical considerations meant a low number of measurements used at each setting, but this was considered sufficient, given other, greater sources of uncertainty.

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1 The *Munter* is sometimes referred to as the *Backhand*.

2 The *Munter+* is a variant of the *Backhand*. The *Super Munter* is a *Double Backhand*.

The main cause of uncertainty in this investigation is thought to be the limited range of loads and the low maximum load used. Under such low loads some of the wrap arrangements tested showed non-ideal behaviour and a significant departure from Equation 1, violating its assumptions, and thus not providing a useful basis for comparison.

Conclusions

Keeping in mind the limitations outlined in the Discussion section and the data in Table 1 and Figure 1, this study seems to support the following conclusions for the rope tension reduction arrangements similar to the one evaluated in this investigation:

1 A baseline *single turn* (half circle) around a spar reduces the hitch tension due to load by about one-third.

2 Adding one or two round turns decreases the tension at the final hitch by about three-quarters and a factor of ten respectively, which may be all that is needed for the final hitch not to jam, even at high loads.

3 Adding more round turns will further reduce the tension, but may be unnecessary or impractical, in addition to requiring more rope.

4 Using a reversed turn around the standing part (à la *Munter* hitch) uses only two passes of the rope around the spar but seems to significantly improve on a simple round turn performance, and is almost as effective as a double round turn. The latter, however, uses more rope and requires three passes around the spar. This is not entirely surprising as this arrangement seems to have the total angle swept by the rope larger than a round turn but smaller than a double round turn. The contribution of the extra reversed turn around the standing part to the overall friction reduction of this method is difficult to quantify with the present protocol. In addition to the *Munter* spar-wrapping technique being more efficient than the simple round turn, while requiring the same number of passes of the rope around the spar, there may be other motivations to prefer *Munter* method over the simple round turns, the ease of tying the final hitch when the standing part is under tension and not subjecting the spar to a unidirectional torque implied by all methods using round, unreversed turns.

5 The double reversed backhand turn (*Super Munter*) appears quite stable and is liable to provide more tension reduction than a single *Munter* but its performance could not be quantified by this investigation, principally due to insufficient range of loads. This method also uses a significant length of rope, which may be undesirable.

6 The *Munter*+ hitch, in which there is an additional half turn around

the standing end, seems to provide adequate friction reduction, but the data gathered under the current load range is insufficient to draw valid quantitative conclusions. This method, despite potentially providing higher friction and thus greater tension reduction, may not have the advantage of *Munter* method of balancing the direction of torque on the spar, but it is an interesting construct worth investigating under higher loads, which may provide more conclusive data on its performance and stability.

Further investigation with a greater range of applied tensions, other types of spars and ropes, and some modifications to the experimental apparatus may improve on the present tentative and preliminary findings, quantify the wrapping methods that were difficult to evaluate with the current study protocol, and widen the validity of the results and conclusions of this investigation.

Despite the limitations of the present study and the consequent uncertainties and data gaps as discussed above, present data support recommending the *Munter* method as the most rational and adequately efficient rope tension-reducing technique among those tested in this study, as this technique:

A Significantly reduces the tension of the rope entering the hitch to some 15% of the standing part load, which is likely sufficient to prevent severe jamming of the final hitch even for high loads.

B Requires only two passes of the rope around the spar, yet performs nearly as well as the double round turn which requires one more pass.

C Reverses the rope wrapping direction in the second turn which balances the torque that the standing end can exert on the spar.

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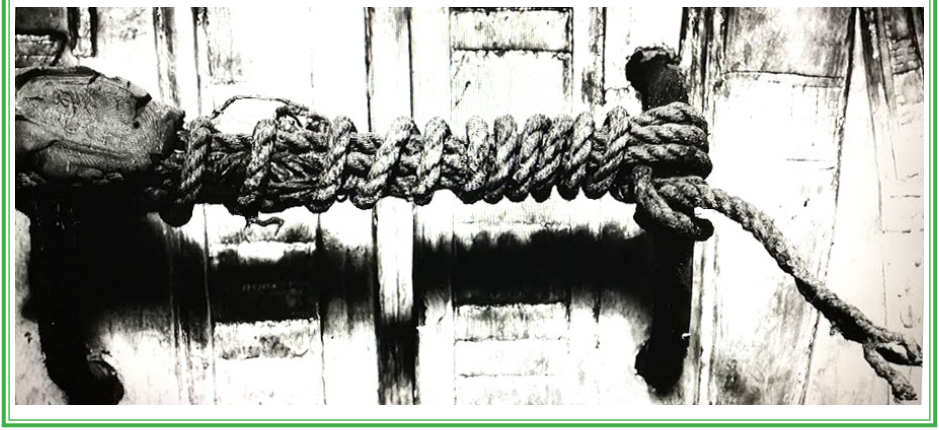
ANCIENT ROPE - SPOTTED BY LUIS GILPÉREZ

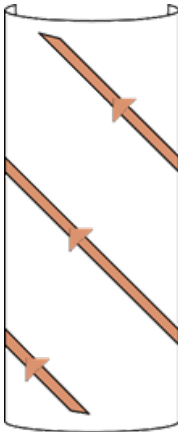
A 5,000 year old knot closing a door in an Egyptian pyramid.



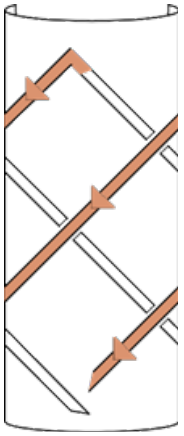
A Handy Long Knot

by Jim Caswell

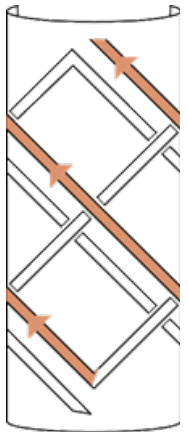
A 4-bight knot with herringbone pattern



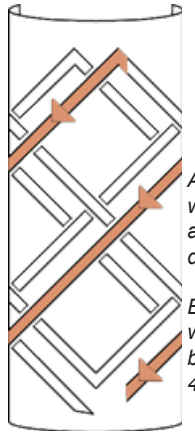
Wrap up as far as required for cover NB: Two wraps only as an Illustration



Wrap down going Over All (OA) laid strands



Create bight inside laid strand. Wrap up on right of strand going OA laid strands

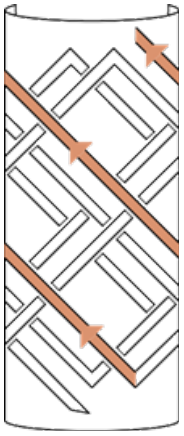


Wrap down on right of laid strand going OA laid strands

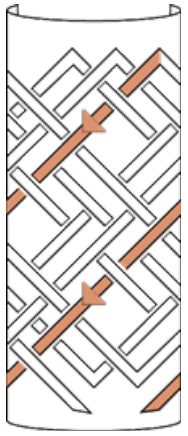
NOTES

At the start, wrap up as far as required for desired cover

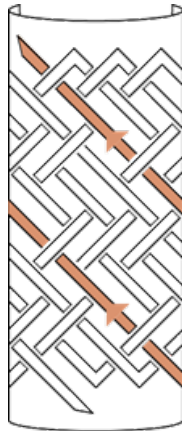
Each initial wrap should be at approx. 45°



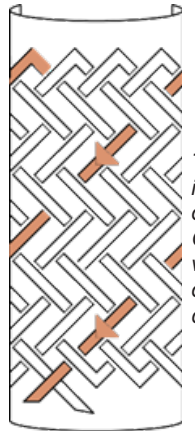
Wrap up on RH of laid strand going OA laid strands



Wrap down on right of laid strand going O1U1 at bight then O2U1 for remainder



Wrap up on right of laid strand going O1U1 at bight then O2U1 for remainder



Wrap down on right of laid strand going O1 at top bight then U2O2 for remainder, finishing U1 at bottom bight

This method is based on Jules Godfrey's vague memory of Long Knot construction

From an Old Book I Found

by Richard Hopkins

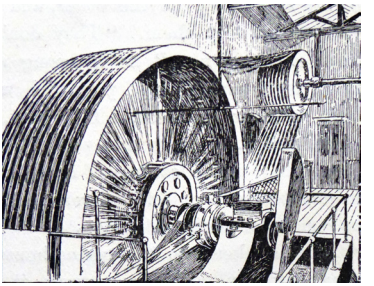
Recently, I acquired a copy of *Industrial Explorings in and around London* by R Andom (pen name of Alfred Walter Barrett) written in 1895.

The author, having realized, for practical reasons, that he could not roam the world, decided instead to investigate the industries of London.

The book visits a dozen factories as diverse as piano-making, candles, matches, sweets and mineral water, but the two that I found worthy of most attention were the visits to Rope-land and Wire-land.

He calls each site a Land and is rather verbose, with a late Victorian sense of humour, but very readable.

In Rope-land which turns out to be J T Davies, Rope and Twine maker whose site runs parallel to the railway near Coburn Road in East London, we are first taken to the engine house where two boilers provide the steam for powering the complete site. Power was transmitted by overhead belts, made, in this instance not from belting, but from rope made on site which was stronger and better able to transmit the energy required. Also it was easy to make a new one if the drive band should fail.



It was interesting to learn that even in those days, every machine had a safety cut-out switch and that there was an automatic sprinkler system on a dry riser should any of the departments catch fire.

The bales of compressed raw material, jute, hemp, manila etc were fed into a crusher which rendered them workable. This was then carded into slivers of different grades with the softer stuff going to fine cordage and the coarser stuff ending up as rope.

A "CARD," OR SHREDDING MACHINE.

A TWISTING MACHINE.

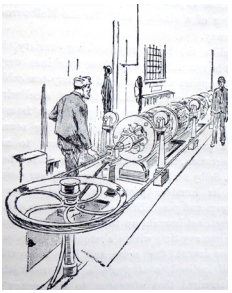
The slivers were taken to a twisting machine to give threads that were spooled onto bobbins which were loaded into the larger twisting machine that gave the cord or rope.

This twisting was repeated on ever larger machines until the desired rope was produced.

Tarring the cordage with Archangel tar is described, as well as the sizing and polishing of the twine, also made on site.

The visit ends with a description of making packing for steam cylinders where a rubber core was fed into a braiding machine and covered with strands of cord.

Later in the book we go to Wire-land which is Bullivants on the Isle of Dogs, who at that time claimed to be the largest wire rope manufacturer in the world.

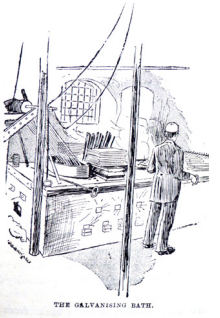


Here the raw material came from the rolling mills of Lancashire in the form of huge coils of iron and steel wire of various grades, which was then transformed into the wire rope we are familiar with.

Because of the weight of the materials (cables weighing thirty tons were not unusual) a rail trolley system operated throughout the site.

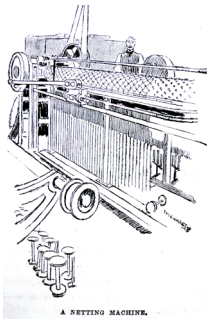
Oil-soaked hemp rope was used for the core of many of the wire ropes, and the process in many ways resembled that which the author had seen in Rope-land but on a much noisier and larger scale.

A process similar to the tarring bath was galvanising the wire rope. The rope/cable? was first degreased in a caustic potash bath then went through a bath of hydrochloric acid.



THE GALVANISING BATH.

After being drawn through heated powdered coke called ‘breeze’, the wire entered the molten zinc bath. On removal, it again went through more breeze to prevent early oxidation before being coiled ready for use.



A NETTING MACHINE.

One of the products made by Bullivants at that time was anti-torpedo netting for the Royal Navy, but as this used a “secret” process Barrett was not told the details, although he noted they were all hand-made and woven through strong galvanized steel rings.

On a smaller scale, they made chicken-wire netting and fence netting. He attempts to describe the machines for making them, but more detail is required. Much of the netting went to Australia and apparently orders for a thousand miles were not uncommon - not presumably in a continuous length, although they had produced a six-mile long cable for the Melbourne Tramway.

Bullivants fitted thimbles on their cables in their own workshop and had a large maintenance department and machine shop, as they also made all the ancillary tools and fittings such as nippers, reels, blocks and thimbles.

To a knot and rope enthusiast it is a very superficial guide to the processes described, but probably was an eye-opener to many in the Victorian age.
I was not sure if it was aimed at "bright" children or the generally uninformed adult, but I enjoyed both the chapters I have summarised and the rest of the book.
I looked at my A-Z of London to find the roads mentioned in the book and most of them are still there, although not necessarily on quite the same lines as in 1895. This is especially the case for Bullivants' location.
I was also amused to see 17 roads that include 'rope' or 'ropewalk' in their names, and the way they are distributed around the areas where they would have been required.

GUILD MEETINGS 2020

March 28-29
At the Fisheries Museum in Fécamp, east of Dieppe on the French channel coast. Exhibition - International Knotting Days - and AGM of IGKT France. The membership of our flourishing French branch is now nearly 200 and there will be lots to see (and food to enjoy). Contact Jean-Pierre Durand on durand0547@orange.fr

April 30 - May 3
The Spring Symposium and AGM is being held in the Floral Pavilion, New Brighton on the northern tip of the Wirral Peninsula. This is just across the River Mersey from the port of Liverpool. Details were in the flyer with the December Knotting Matters and are downloadable from the website in the News section at https://igkt.net/news.

September 11-13
At the Old Harbour, Mariehamn, Åland Islands, Finland.
Mikko Snellman, (info@snellman.ax) whose beautiful work is often exhibited on Instagram, is single-handedly making all the arrangements for the second Autumn Meeting to be held in Scandinavia. This promises to be great fun. Booking details will be on the website and in the June issue of Knotting Matters.
Do try to get to one or more of these meetings this year. Colin Byfleet.

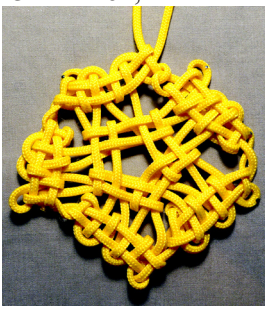
Panchang: Interwoven Reflex & Bights

by Europa Chang Dawson

Pan Chang knots with interlinked and interlaced bights produce compound designs with some sections single-layered and other sections double-layered. While the resulting knot may be decorative, the knot itself has travelled far from the original idea of amulet-containers. When arc-bights are interwoven, though, they form a complex knot that is double-layered throughout.

This piece was designed for the display in Brussels' Museum of Military History in 2013. The central section is *ABOK* #2458. Usually, such knots would have the sections separated by wrapping the bights - or using 3Lx5B Turks Heads (doubled) – in colours to complement the main cord of the knot.

In this case, glow-in-the-dark beads were an exact match for one of the cords, better than any whipping twine I could find. My generation of Chinese children still learned the Trimetrical Classic[1] in much the same way as children learn nursery rhymes, with references to historical events – 'Mistress Mary, quite contrary', 'Little Jack Horner', 'The Grand Old Duke of York' etc, but referring to Chinese matters. One section of the Trimetrical Classic states that there are: Three sets of laws that society follows: the law of the heavens (ie astronomical cycles), the law of the earth (seasons and harvests) and the law of social interaction. The three sources of natural light are the sun, the moon and the stars. The three social bonds are the Ruler's responsibility to those he governs; the duty of the People to the ruler and the state; and the ethical concern of folk for each other. In tying triangular forms the knotter is (supposedly) reminding everyone of these sets of three. Sometimes, a knot like this, the centre of which is *ABOK* #2462, would be used as a 'setting' for a disc-shaped object that held sentimental value (such as the piece of jade that a husband would present to his wife on the birth of their first son). Jade was the gemstone most frequently seen, but other semi-precious discs existed, as did gold-work, and these were sometimes encased, either to prevent abrasion or to support an old piece that had cracked and been glued together.



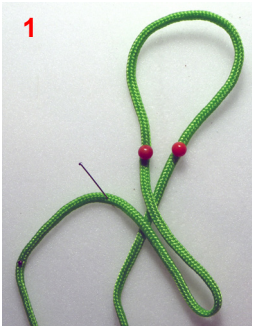
1 *Trimetrical* because each phase of this classic contains three words.

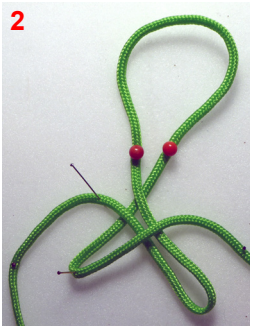
I cannot remember seeing these tightened up round the central disc, but the slack knot (as in the image) would turn up occasionally in work-baskets belonging to my aunts and great-aunts.

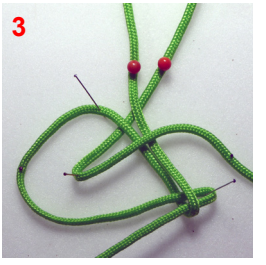
[In my childhood, tidying up the threads in a work-basket was considered suitably decorous amusement for good little girls when their elders took them visiting.] It makes me wonder if such knots were passed on with the gemstone in case of need. By my childhood, of course, the gems themselves would have been sold to provide for the household.

By far the most frequently used interwoven form is the Pan Chang with reflex bights. Here, an arc-bight is extended, brought round to a different side of the square or rectangle and woven into the Pan Chang as a finger-bight. This gives an extra variation to the outline of the finished knot and is much used in tying butterfly and bat forms.[2] (*Swallow-tail*[3] right)

The photos 1-9, show the sequence for tying the reflex Pan Chang form that is said to resemble a child's drum-rattle. This is like a tiny drum with a handle sticking out from one side of the cylindrical part and a bead on a string placed at opposite ends of the diameter perpendicular to the handle. As the toddler waves the rattle, the beads strike the drum and in makes a noise, but being comparatively hard to hold, the child doesn't keep up the noise for too long! This is one knot where the cord is middled and each side is taken on alternate 'moves'. I have found this to be the least confusing method. I think this version of the Pan Chang may have been designed in the mid-twentieth century, because Grandpapa had not encountered it.

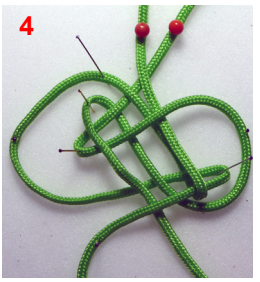


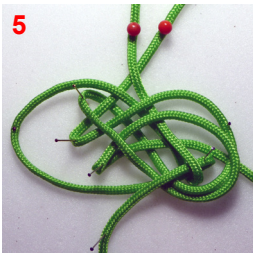


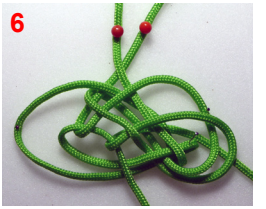


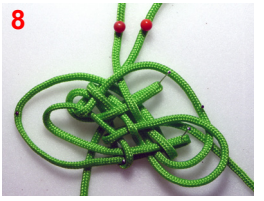
2 'Butterfly' and 'Bat' are both homophonic with 'blessing'

3 This image should have been shown in *KM* 145, 18, when reference was made to a butterfly with a Matthew Walker tied in the lower wings.









AUSTRALIA IGKT MEETING 2021 GEELONG

On a smoky Monday morning, 6th January, after an exchange of emails and calls with Barry Smith, I stepped off a train at Geelong station, about an hour from Melbourne, to see the sights, and check out the venue for the proposed IGKT Australia meeting, the Wool Museum.

Old Wool Auction Room

Barry met me and we went straight to the Museum to see the old wool auction room which will be the site of the 2021 IGKT meeting. The room can be extended by removing the left wall in the picture. Following this we had a rapid look round and then headed off for a quick tour of the town so that Barry could point out camping grounds and hotels as well as various 'watering holes'. More details in later *KM* editions.

While we chatted, it turned out that Barry had been a tug-man and he mentioned using broken tug lines to make fenders, and he had photos! After some gentle arm-twisting, I think Barry agreed to dig out the photos and send us a description to accompany them, hopefully for June. This will also give him the opportunity to add a knotter's autobiography which is rather apt as he will be hosting the Geelong meet. Between my visit and this edition of *KM,* Barry was to face some health issues so in all of our names, I wish him well!

MMcP

The Ropemaker's Top

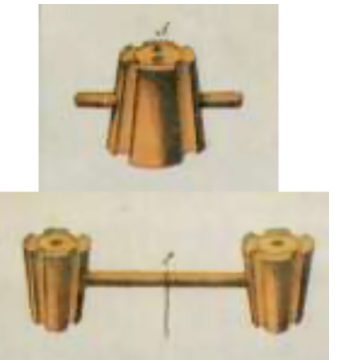
by Des Pawson

Walking back and forth, the rope-maker has to cover many miles in a day. First to stretch out the yarns need to make the strands of the cordage, and then after the yarns are twisted together into a strand. These strands are kept apart with the rope-maker's top.

Top in action prior to closing strands

These tops are easily recognised by the three or four deep grooves and often a great deal of wear, and usually being thicker one end than the other, though there are exceptions. Larger ones may have a handle to stop the top twisting. Further twisting will close the strands into the rope, the rope-maker holding the top and controlling the speed of closing.

A selection of rope makers tops clockwise from top left For 3 strand rope from Chatham
From St Ives Huntington for 4 strands with a centre hole for heart
For 3 strand made from a plumber's boxwood turnpin,
A double-ended top for 3 strand rope found in Alsace



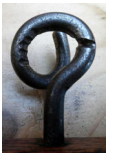
A single top and a twin top for closing two small ropes at once.

If several yarns can be carried down the walk at the same time, there is a saving in the distance covered.

In large sizes of rope a bundle of yarns is drawn out at one go, but this will still mean three (or four) lengths of the walk, followed by a single length to close the rope with the top.

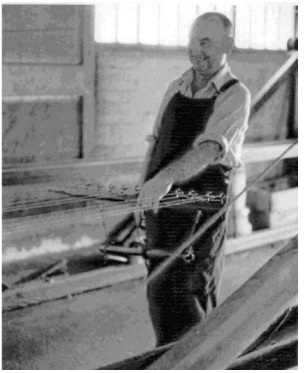
Small ropes can be closed with a double top, effectively making two ropes at a time.

When it comes to fine twines or cords, the twine-makers use a far rarer tool, a parting stick. This one came from D F Ellwood & Son, Kendal and might be 100 years old. The close-up of one of the eyes shows the amount of wear.



A Parting Stick from D F Ellwood & Son, Kendal,
and a close-up of one of the eyes from the stick showing wear

The illustrations show the parting stick in use, with Richard " Dick " Fisher using it in the early 1970s to make twine.



Here Dick is pulling multiple yarns down the walk at the same time.

Here he is closing 3 x 3 strand cord at one time.

The parting stick is not unique to Ellwoods of Kendal, but was certainly in use in that rope, net and twine county of Somerset at T S Donne & Sons, Castle Cary, and I understand it was also common in Bridport in Dorset, as well.

From an old print

The Chinese had another way using multiple tops as can be seen from this print from 1812.

Budding Knot Tyers
by IGKT France*

The seamanship workshop was born of a chance meeting between two associations, and set up by the entertainment team of the Maritime, Inland Waterway and Port Museum of Rouen (France).
The initial project, in the seamanship space of the Museum, was to redo the knot board which, as had been pointed out by an IGKT member, contained quite a few errors. The work was carried out in May 2019.
Marylise Guilbert, responsible for activities at the Museum, and Claude Davesne, member of IGKT France, and passionate about seamanship, decided to cooperate and set up a workshop about nautical knots, altogether appropriate to the location.
After convincing the Museum's management, Marylise decided to create an activity combining the discovery of an ancestral art with educational as well as recreational experimentation.
The preliminary phase consisted of training the eight future instructors in the art of knot tying, in about ten, three-hour sessions.

Following the experience of the small boats that children build themselves and then sail on a small pool inside the museum, there was already a well-organised educational structure that was transferred to the knot tying.

Instead of asking ourselves what kind of knots we were going to teach them, Marylise advised we should turn the question around:

"What are the children going to be able to learn with us?"

So the format was worked out around the idea of observing and touching: "One cannot talk about and show everything; one must keep it simple in order to make sure it stays fun."

When schools come in, classes are split into small groups depending on the number of pupils and instructors. They then visit the museum to admire its numerous model sailing boats. They imagine themselves as pirates or sailors climbing in the rigging, and learn from their guides the importance of the ropes, and therefore the knots, on a ship.

The children are then divided between tables of four or five, where there are pieces of string and diagrams of basic knots. A few general explanations are provided: under/over, working end/standing end, and then the apprentice knot tyers try to reproduce the knots they have in front of them. Each one progresses at their own pace, in any order they prefer. The instructors go from table to table to give advice, tell a story or simply tie and explain the knot.

Marylise explained that the learning process is different for everyone. "Some prefer to be shown and to tie knots at the same time as the instructor, others would rather their classmates show them, and yet others learn by looking at the drawings, all of which had been well thought through beforehand."

Next comes the creation of a small macramé figure.

First: starting with a thick rope, the instructor explains how to proceed.

Second: each table goes to collect the necessary materials and choose their preferred colour for their figure.

Third: once everyone has their supplies, the children try to follow the instructor as they are shown a second time.

Fourth: each one constructs their own figure mostly by themselves. As the work progresses, different figures emerge: colourful, stocky or slender, some with short arms, some with extremely long ones. The final touch is to draw the eyes and mouth with a marker pen, and then the figures can fly, fight or sit quietly in a Bowline.

The session lasts about two hours, with the knotting workshop taking at least an hour. Over 4,000 pupils attended the workshop in the school year 2018/2019.

Claude Davesne and the Knotting Team of the Rouen Maritime Museum

* this article first appeared in *Sac de Noeuds* 44, Février 2020, 16-17.

English translation by Jean-Pierre Durand.

Leaves of Lace

by Lindy de Wijn

Lindy de Wijn

My love for bobbin lace-making started as a child watching a family friend from the UK make lace when she visited. I love the beauty of lace and the way the bobbins rhythmically dance across the pillow, as I work.

I love the freedom of not having a fixed grid when designing, and enjoy creating pieces for public spaces, weaving the tradition of lace into this contemporary world. I am inspired by the colour and forms in nature and design.

Leaves of lace is a collaborative artwork that evolves each time is it installed. The leaves are a contemporary reflection of the individuals that make up our community. There's more about my practice on my website and about other lace creatives that inspire me on my blog. Follow me on my blog www.lindydewijn.com.au

Instagram - @lindydewijn

http://beyondthedoily.blogspot.com.au/

[I was just walking down the street when I noticed the display of leaves in a gallery window and went in to ask for more detail. Our thanks to Claire Quirk, co-founder of Clan Collective, Gallery, Store and Design Studio, 134 High Street, Preston VIC 3072, who facilitated our contact with Lindy and took photos which sadly we don't have room for. Editor.]

NEW IGKT PUBLICATIONS

One of the Guild's longstanding members in Australia, Frank Brown, has very kindly assigned to the Guild the copyright of his books on the construction of his varied and humorous FEGs (effigies).

They have been reset and are now available from the Supplies Secretary, Andy Hudson.

The String Zoo, in colour, 92 pages with over 300 illustrations - £14

The Rope Menagerie, monochrome, 80 pages with over 200 illustrations - £8

OBITUARIES

Gladys ‘Glad’ May Findley

March 1931 – January 2020

Glad passed away on 26th January 2020 in Aberdeen, having fallen and broken her hip just a month earlier. Glad joined the International Guild of Knot Tyers (IGKT) soon after its creation on HMS President in 1982, persuading Peter and Catherine Golding to join with her and was a star of the world of knotting in the 1980s and 1990s.

From 1993 to 1995 she became the President (as the post was called at the time) of the IGKT, the first woman to be elected to the role, she was always proud to say.

Glad’s passion for knotting had begun in a small way and quite by chance in the late 70s when a friend showed her how to make a macramé pot-hanger. Something about this particular art of knotting gripped her imagination and it became a huge part of her life.

She made many different things, both decorative and useful. Owls were a big thing, as can be seen in the photograph. She opened a small shop in Guildford, Surrey, called Macramé Plus to display and sell her creations.

Press photo at the opening of Glad’s shop flanked by Percy Blandford and Geoffrey Budworth

Right: Glad in her shop with owls, her book and a knot board she had comissioned

She began classes teaching others how to do macramé in a studio in the back garden. Her husband Vic, always hugely supportive, built special sloped desking for her students to work on, not to mention making countless owl-perches (see the book's cover). He also made the seat of her magnificent macramé swing, shown here perched temporarily on the family's more conventional frame.

In 1986, came something that she regarded as one of her proudest achievements, she published a practical guide book on how to do macramé called *Macramé Projects*, which she co-authored with Percy Blandford, the Guild's President at the time.

After Vic died in 1989 Glad threw herself into organising fund-raising fairs for Cancer Research, macramé stalls featuring heavily. The classes not only continued, but also expanded, with Glad providing teachers from her own students, working to a standardised curriculum. Her classes became *de facto* the Guild's first (Surrey) branch and she provided the Guild with a lot of active members, including the late Howard Denyer, Ian Schofield and John Smith. She also brought into the guild the professional craftsman and prolific knotbook illustrator, Stuart Grainger. Her becoming President of IGKT in 1993 seemed like a natural progression.

In 2005, at the age of 74 she moved from Woking to Aberdeen, and with her finger nimbleness dwindling her macramé production came to an end. In the last two years or so, she'd been excited to see what appeared to be a macramé revival, with articles appearing in magazines and on TV. Glad's vibrant personality and boundless energy made her an inspiring advocate for her beloved macramé.

Glad is survived by her children Paul and Sandra, her granddaughters and great grandchildren.

We intend to publish memories of, and anecdotes about Glad Findley in the June issue of Knotting Matters. So keep them coming - Editors

News from the Branches

YORKSHIRE BRANCH ANNUAL REPORT

Throughout 2019, the Yorkshire Branch was busy as usual, being represented at numerous events, attended/staffed by 2-10 members, which included:

March	Branch meeting, opening subject "Finishing Rope Ends".
April	Rodley Nature Reserve, Easter Egg Hunt
May	Skipton Waterways Festival, always a popular event
May	Newton le Willows Rural Craft Fair, supporting the NW Branch
June	Rodley Nature Reserve Bird Fair
July	Skipton Sheep day
July	Bingley Teddymania
August	Rodley Nature Reserve Summer Fair
August	Brighouse Artisan Fair
Sept	Walton Hall Cheshire, supporting the NW Branch
Sept	Strawberry Island Boat Club, Doncaster
Oct	South Pennine Boat Club
Nov	Branch Meeting, opening subject "Coverings"

PROPOSED EVENTS FOR 2020

March 15	Sunday Branch meeting, opening subject "Tools"
April 30-May 3	AGM Wirral
May 9	Saturday Skipton Waterways Festival
June 6	"Woolfest" Armley Mills Leeds, a new event for us
July 5	Sunday Skipton Sheep Day
Aug ?	Rodley Nature Reserve Summer Fair
Aug ?	Brighouse Artisan Fair
September 20	Sunday Elland Rotary Club Show
November 15	Sunday Branch meeting, opening subject .... TBA

Probably more meetings as yet TBA. Some events will be fully staffed, but we always welcome visitors. Please contact me for further details.

Our meetings (av. attendance 20) are always on Sundays 11am to 4pm. Bring your own lunch but drinks and afternoon tea are provided. The day's theme usually lasts about an hour, the rest of the time is spent sharing knowledge, discussing problems, and socialising. Please contact me before you come if you are not on our usual notification list.

David Phone: 0113 2572689 e-mail: wayzegoose_uk@yahoo.co.uk

BRANCHES

Australia

Contact: Robert Underhill
rvumoose@icloud.com

Tel:+61 488 777 785
34 Dawson Place, Donnybrook,
WA 6239 Australia

Belgium

Contact: Ronny Wouters
rcwouters@scarlet.be
Tel: +32(0)3 658 7937
Venue: Akkerlaan 24, 2900 Schoten, België

Canada

Southern Ontario Knot Tyers
http://knotcanada.webs.com/
Contact: John Staley
southern.ontario.knotyers@gmail.com
Tel: +1(1) 905 389 2509
Venue: Hamilton, Ontario

France

www.igkt.fr
Contact: Jean-Pierre Durand
durand0547@orange.fr
Tel: +33(0)6 64 00 66 91

Germany

http://www.knotengilde.de/
Contact: Yuval Dvoran
info@knotengilde.de

Internationale Gilde der
Knotenmacher Deutsche Sektion e.V.
c/o Matthias Böving
Kappenstrasse 22
45473 Mülheim/Ruhr

Netherlands

Contact: Frits Ottens
frits.efina@telfort.nl
Tel: +31 (0) 587 850 011
Venue: Binnenvaart Museum,
Maasstraat 19, 3313 CR Dordrecht.

New Zealand

All enquries about this branch: contact the Guild's Web Administrator.

United Kingdom

Dorset - UK

Contact: Peter Goldstone
goldstonepg@aol.com
Tel: +44 (0)1725 516 258 or
Mobile: +44 (0)7702 733005
Venue: The Ship Inn, Custom House Quay, Weymouth DT4 8BE

East Anglian - UK

Contact: Stuart Weston
pugwash1941@gmail.com
Tel: +44 (0)1449 674 327 or
+44 (0)7801 239 731
Venue: Windmill Room, Abbots Hall Primary School, Danescourt Ave, Stowmarket, Suffolk

Midlands - UK

Contact: Bruce Turley
bruce@btknots.co.uk
Tel: +44 (0)1214 534 124
Venue: The Old Swan Inn,
(Ma Pardoes), 89 Halesowen Road,
Netherton, Dudley, DY2 9PY

North West England - UK

Contact: Ian Rogers
iansrogers@aol.com
Tel: +44 (0)1606 590 729
Venue: Red Lion, 1 Wharton Rd, Winsford, Chester CW7 3AA and Tattenhall Marina, Newton Lane, Tattenhall, Chester CH3 9NE

Solent - UK

http://igkt-solent.co.uk
Contact: Chris Jenkins
igktchris@btinternet.com
Tel: +44 (0)2392 601 779
Venue: Fareham Sailing and Motor Boat Club, Lower Quay, Fareham, Hampshire PO16 0RA

Surrey - UK

www.surreyknots.org.uk
Contact: Tony Shellard
secretary@surreyknots.org.uk
Tel: +44(0)1483 502 156
Venue: Guildford District Scout Centre, Nightingale Road, Guildford, GU1 1ER

West Country Knotters - UK

Contact: Richard Hopkins
richardhopkins907@gmail.com
Tel: +44 (0)1179 867 146
Venue: The Benjamin Perry Boathouse, Phoenix Wharf, Lower Guinea Street, Bristol BS1 6TJ

Yorkshire - UK

Contact: David Pearson
wayzegoose_uk@yahoo.co.uk
Tel: +44 (0)113 257 2689
Venue: Pudsey Scout Headquarters, The Lanes, Pudsey, LS28 7AS

United States of America

Alaskan Branch - USA

Contact: Charles Rigden
charles@rigdencpa.com
Tel: +(1) 1 928 231 2775
Venue: Anchorage Senior Center, 1300 East 19th Avenue, AK 99501

North American Branch - Knot in the Middle - USA

www.igktnab.org
Contact: John Staley
southern.ontario.knotyers@gmail.com
Tel: +(1) 1 905 389 2509

North American Branch - Mid-Atlantic Region - USA

Contact: Michael Pollock
nexialist02@yahoo.com
Tel: +(1) 1 301 649 1165

Pacific Americas - USA

www.igktpab.org/
Contact: Evie Cowper
igktpab@gmail.com
Tel: +(1) 1 310 679 6864
Venue: Los Angeles Maritime Institute 73 Berth Suite 2, San Pedro, CA 90731

All branch details as on IGKT website on 26/2/2020

BACK COVER: Leaves in Lace by Lindy de Wijn **see p42**

IGKT SALES	GBP
A New System of Knotting by Harry Asher - A reprint. Asher's genius is shown really clearly	£7.00
The Sailor and his Knots - A unique reprint of Ashley's 1925 work	£10.00
A Practical Approach to Circular Knotworks by A & C Åström - Circular knots based on a Celtic pattern	£10.00
Knotty Potty by 'Jenny Wren', alias IGKT co-founder Geoffrey Budworth	£4.00
Plaited Moebius Bands by Geoffrey Budworth - A collection of knots with the properties of Moebius strips	£2.00
Thou Shalt Knot – Clifford Ashley Exhibition 2017-18. Ed. Christina Connett N. American members please order from Amazon	£11.50
Breast Plate Designs by Brian Field - Designs to make and wear	£3.00
Concerning Crosses and More by Brian Field - Flat Knots tied 'in hand'	£3.00
Knotted Novelties by Eric Franklin - Reprint of *Nylon Novelties*	£3.00
Turksheads the Traditional Way by Eric Franklin - A really useful introduction	£3.00
Knotcraft by Stuart Grainger - A much-loved book about decorative knotting	£4.00
Knotted Fabrics by Stuart Grainger - Making mats, covers, baskets, etc. A reprint of this popular work	£10.00
Turkshead Alternatives by Stuart Grainger - Decorative chains and grommets	£3.00
Breathing Apparatus Guidelines by Colin Grundy - A fascinating story	£4.00
A Comprehensive Text of Turk's Head Knots by James Harvey - A reprint of this great book	£16.00
The DIY Book of Fenders by Colin Jones - Does exactly what it says	£12.95
Advanced Knotting by Maurice McPartlan - An excellent DVD for complex 3D Turks Heads	£12.00
Monographs 1-14 by Des Pawson - Various prices, see full list on website for details	
Decorative Woven Flat Knots (incl pdf) by Skip Pennock - Lots of terrific shapes	£12.50
Design and Make Rope Mats and Rosettes by Nils Kristian Rossing - 'Recipes' for many circular mats	£10.00
Charlie's Knots by Charlie Smith - An easy approach to tying Turks Heads directly in the hand	£3.00
A booklet on Lanyards by Willeke van der Ham - A very easy-to-follow introduction to making useful lanyards	£4.00
A Fresh Approach to Knotting and Ropework by Charles Warner - A wonderful work with over 500 diagrams	£15.00
The Wee Lighthouse Knot by Pieter van de Griend	£4.00
IGKT Car Window Sticker	£2.00
IGKT Cloth Badge	£4.00
IGKT Enamel Badge - clasp or pin fitting	£4.00

Please e-mail supplies@igkt.net with your order stating your full postal address to which the items should be sent. We will return a payment request to you (including postage & packing) so that you can make secure payment by PayPal online, using any card.

If you do not use e-mail, please contact the

IGKT Supplies Secretary

10 Chine Avenue, Bittern, Southampton SO19 7JF UK